Electric Drives
and Controls

Hydraulics

Linear Motion and
Assembly Technologies

Pneumatics

Service

Rexroth
Bosch Group

Motion-Logic system

IndraMotion MLC
Controller based

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Simple, open and flexible

- Integrated runtime system with motion, robot and logic controls
- Extensive software libraries in conformity with IEC 61131-3 and PLCopen
- Innovative motion function FlexProfile for complex motion sequences
- Intuitive engineering with the software framework IndraWorks

The compact Rexroth IndraMotion MLC motion-logic system gives you any freedom you wish for your consistent and modern machine automation. Innovative software and firmware functions, easy engineering and open system interfaces provide maximum flexibility in all motion applications.

By combining motion, robot and logic controls with technology functions, you can synchronize multi-axis applications very easily freely scalable for centralized or decentralized solutions with a flexible control platform. Motion functions, such as master axes, electronic gears, cam disks and the innovative FlexProfile for complex motion sequences, can be used quickly and transparently. Robot control provides full functionality for multi-axis path interpolation in space. Integrate hydraulic axes just as easily and quickly in your automation solution with same tools and functionalities. The engineering framework IndraWorks with intuitive operation and the PLCopen-conforming software interface with standardized function blocks according to IEC 61131-3 facilitate integration in various machine designs.
Both electric and hydraulic motion control applications for all tasks in automation, IndraMotion MLC motion logic system is the answer. Especially in terms of effective engineering, flexible process adaptation and cost-optimized automation.

Technical data

		MLC L40 1G	MLC L65 1G	MLC L25	MLC L45	MLC L65
Control units						
Runtime system	integrated motion logic system	●	●	●	●	●
Multitasking		●	●	●	●	●
Data management	Code, data, remanent data, user data	●	●	●	●	●
Storage	Boot project	●	●	●	●	●
	PLC project as packed archive file	●	●	●	●	●
	User data to the internal memory and a removable storage medium	●	●	●	●	●
Support	System events	●	●	●	●	●
User memory	Total: Code, data	24 MB	36 MB	12 MB	24 MB	36 MB
Retentive memory	Total: System, user			256 kB	256 kB	256 kB
On-board diagnosis and settings						
Status display (boot, SERCOS, test)	Display	●	●	●	●	●
Errors, warnings, messages, system reset	Display, keys	●	●	●	●	●

Motion-Logic system

IndraMotion MLC ■ Controller based

Ethernet settings (IP address)	Display, keys	●	●	●	●	●
Voltage monitoring, watchdog	LED	●	●	●	●	●
Relay output ready for operation	LED	●	●	●	●	●
IndraMotion Service Tool		○	○	○	○	○
Interfaces on board						
sercos III	Real-time Ethernet bus	○	●	●	●	●
sercos II	Real-time motion bus	●	○	○	○	○
Master axis grouping	sercos III	○	○	○	○	○
	sercos II	○	○	○	○	○
	Number of controls in the group	64	64	64	64	64
PROFIBUS	Master	●	●	○	●	●
	Slave	●		○	●	●
PROFINET IO	Controller (Master)			○	○	○
	Device (Slave)			○	○	○
EtherNet/IP	Scanner (Master)			○	○	○
	Adapter (Slave)	●	●	○	○	○
Ethernet TCP/IP		●	●	●	●	●
Control grouping	Ethernet TCP/UDP/IP	●	●	●	●	●
RS232	On board	●				
Number		4	4	2	4	4
PROFIBUS-Master/-Slave		○	○			
Realtime-Ethernet/ PROFIBUS				○	○	○
DeviceNet-Master		○	○			
Realtime-Ethernet/ DeviceNet				▼	▼	▼
SERCOS III/Master axis grouping (ELS)		○	○	○	○	○
SERCOS 2/Master axis grouping (ELS)		○	○	○	○	○
Programmable limit switch		○	○	○	○	○
SRAM		○	○	○	○	○
Fast I/O		○	○	○	○	○
Options						
HMI						
Inputs/outputs						
On board						
Fast digital inputs	Interruptible, typ. 50 μs	8	8	0	8	8
Fast digital outputs	0,5 A, typ. 500 μs	8	8	0	8	8
Locally						
Fast digital inputs (function module FAST I/O)	Interruptible, typ. 40 μs	○	○	○	○	○

Motion-Logic system

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Fast digital outputs (function module FAST I/O)	0,5 A, typ. 70 μs	○	○	○	○	○
Inline (digital, analog, relais, technology)	64 Byte, max. 512 E/A	◯	◯	◯	◯	◯
Distributed via Inline (IP20)						
sercos III	On board	-/○	○	○	○	○
PROFIBUS	On board / function module	◯	◯	◯	◯	◯
DeviceNet	Functional module	◯	◯			
Distributed via Fieldline (IP67)						
PROFIBUS	On board / function module	◯	◯	-/○	◯	◯
DeviceNet	Functional module	◯	◯			
Distributed via IndraControl S67						
sercos III	On board / function module	◯	◯	-/○	◯	◯
PROFIBUS	On board / function module	◯	◯	-/○	◯	◯
DeviceNet	On board / function module	◯	◯			
Logic-Control						
PLC runtime system						
IndraLogic 1G kernel	Conforming with IEC 61131-3	●	●			
IndraLogic 2G kernel	Conforming with IEC 61131-3 with extensions			●	●	●
Program organization	According to IEC 61131-3	●	●	●	●	●
Loading and executing IEC 61131-3 applications		●	●	●	●	●
Task management						
Freely projectable tasks (priority 0-20)	Cyclic, free-running, event-controlled, extern event-controlled	8	8	8	8	8
Cycle-synchronous processing of the I/O process image		●	●	●	●	●
sercos III synchronous processing of the I/O process image		●	●	●	●	●
min. PLC cycle time	Synchronous with system cycle	1 ms	1 ms	1 ms	1 ms	1 ms
min. Motion cycle time	Setpoint generator	1 ms	1 ms	2 ms	1 ms	0.5 ms
PLC processing time						
Typical processing time for 1,000 instructions/μs	Command mix (Real, Integer, Bool etc.)	50	5	35	30	5
	Bool-Operation	50	5	20	30	5
	Word-Operation	50	5	20	30	5
Motion Control						
Number of axes	Real, virtual, encoder, grouping	32	64	16	32	64

Motion-Logic system
IndraMotion MLC ■ Controller based

Synchronization (ELS electronic line shaft)	real axes(Servo drives)	●	●	●	●	●
	Virtual axes(Virtual masters)	●	●	●	●	●
	Encoder axes(Real masters)	●	●	●	●	●
	real axes(Cross-communication)	●	●	●	●	●
	Dynamic synchronization	●	●	●	●	●
	Master axis cascading	●	●	●	●	●
Positioning	Single-axis	●	●	●	●	●
Electronic gears		●	●	●	●	●
	Intermediate point tables((In the drive, max. 1,024 intermediate points)	4	4	4	4	4
	Electronic Motion Profile(in the output drive, motion profiles with max. 16 segments)	2	2	2	2	2
	FlexProfile(In the control, master-/time-based motion profiles with max. 16 segments)	4	4	4	4	4
Motion commands according to PLCopen (choice)	MC_MoveAbsolute	●	●	●	●	●
	MC_MoveRelative	●	●	●	●	●
	MC_MoveVelocity	●	●	●	●	●
	MC_Home	●	●	●	●	●
	MC_CamIn, MC_CamOut	●	●	●	●	●
	MC_GearIn, MC_GearOut	●	●	●	●	●
Extended motion commands (choice)	MB_ReadListParameter	●	●	●	●	●
	MB_WriteListParameter	●	●	●	●	●
	MB_GearInPos	●	●	●	●	●
	MB_PhasingSlave	●	●	●	●	●
	MB_ClearAxisError	●	●	●	●	●
	MB_ClearSystemError	●	●	●	●	●
Robot control						
Number of axes per kinematic		16	16	16	16	16
Multi-axis kinematics	Incl. auxiliary axes	16	16	16	16	16
Kinematics transformations		●	●	●	●	●
´Types of interpolation LINEAR, CIRCULAR, PTP		●	●	●	●	●
Configurable block transitions		●	●	●	●	●
Override		●	●	●	●	●

Motion-Logic system
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Teach-in function		●	●	●	●	●
Approximate positioning		●	●	●	●	●
Late blending				●	●	●
Belt synchronization		●	●	●	●	●
Jogging/single step				●	●	●
Speed limitation	For path and axes	●	●	●	●	●
Acceleration limitation	For path and axes	●	●	●	●	●
Safety zones		▼	▼	▼	▼	▼
System functions (choice)						
Programmable limit switch		●	●	●	●	●
Measuring wheel		●	●	●	●	●
Probe		●	●	●	●	●
Technology functions (choice)						
Register control		●	●	●	●	●
Cross cutter		●	●	●	●	●
Flying cutoff		●	●	●	●	●
Sag control		●	●	●	●	●
Tension control		●	●	●	●	●
Winder		●	●	●	●	●
Diagnostic						
Diagnosis(status, warning, error)	Function blocks(Software)	●	●	●	●	●
	Parameter access to diagnostics memory(Software)	●	●	●	●	●
	Locally via display(Control hardware)	●	●	●	●	●
	Axis monitoring(e.g. capacity, encoders, limit values)	●	●	●	●	●
	Diagnostics memory(64 kB, max. 999 messages)	●	●	●	●	●
Debugging monitor for IEC applications		●	●	●	●	●
Drive systems						
IndraDrive		●	●	●	●	●
IndraDrive Mi	Firmware MPB	●	●	●	●	●
IndraDrive Cs		●	●	●	●	●
EcoDrive Cs		●	●	●	●	●
SERCOS Pack-Profile		●	●	●	●	●
HNC100.3	hydraulic drive	●	●	●	●	●
Master communication	sercos III	○	●	●	●	●
Master communication	sercos II		○	○	○	○
min. SERCOS 2 cycle time	Synchronous with sercos cycle	1	1	1	1	1
Engineering and Operation						

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IndraWorks		○	○	○	○	○
IndraMotion Service Tool		○	○	○	○	○
Compatibility with all IndraLogic XLC systems		●	●	●	●	●

● Default
▼ In preparation
○ Optional

Components
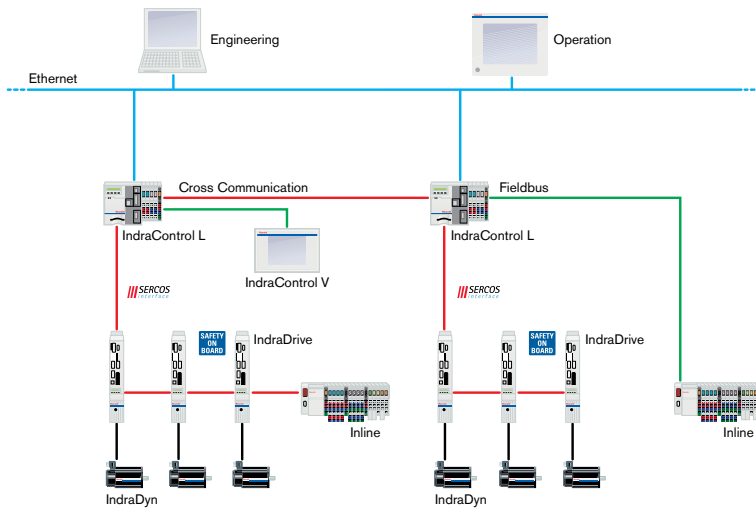
Engineering and operating

Description	Page
Engineering and operating	Software tools

Control hardware and interfaces

Description	Page
IndraControl L	IndraControl L25
IndraControl L	IndraControl L40
IndraControl L	IndraControl L45
IndraControl L	IndraControl L65

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HMI

Description	Page	Details
HMI	Hand-held operator panel	IndraControl VxH
HMI	compact operator terminals	IndraControl VCP
HMI	Embedded PC	IndraControl VEP
Industrial PCs	Panel-PC	IndraControl VSP und VPP

I/O

Description	Page	Details
I/O	IP 20	Inline
I/O	IP 67	Fieldline, IndraControl S67

Type code

Type code	Description	Part No.:
FWA-CML65*-MLC-04VRS-D0	Firmware IndraControl L65	R911320568
FWA-CML402-MLC-04VRS-D0	Firmware IndraControl L40	R911320567

Representante oficial de:

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Bosch Group

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